

1.) Introduction:

The purpose of this exercise was to develop a prototype library system for an undisclosed library according to the requirements document (i.e. Please refer to the requirements document for more detail).

2.) Design:

This section considers the design of the prototype library system. It consists of 1) a Design Diagram of the system and 2) the assumptions made for the design of the system.

1) Design Diagram:

Please refer to the design diagram.

2) Assumptions:

- It is assumed that every month in a year has a total number of 31 days. This is used to calculate the return date of a loan together with the appropriate parameters.

3.) Implementation & Source code:

Please refer to the 'University Library System' folder.

4.) Testing:

This section considers how the prototype library system was tested. It comprises of a test plan, to be compared with the test-runs.

Test plan:

1. Register a staff to the system (Successful):

- **Expected Output:**
Is added: true

2. Add a staff to the system (Unsuccessful):

- **Expected Output:**
N/A

3. Add a student to the system (Successful):

- **Expected Output:**
Is added: true

4. Add a student to the system (Unsuccessful):

- **Expected output:**
N/A

5. Add a book to the library catalogue (Successful):
 - Expected Output:
Is added: true
6. Add a book to the library catalogue (Unsuccessful):
 - Expected Output:
N/A
7. Remove a user from the system (Successful):
 - Expected Output:
Is removed: true
8. Remove a user from the system (Unsuccessful):
 - Expected output:
Is removed: false
9. Remove a book from the library catalogue (Successful):
 - Expected Output:
Is removed: true
10. Remove a book from the library catalogue (Unsuccessful):
 - Expected Output:
Is removed: false
11. Issue a short loan to a user (Successful):
 - Expected Output:
Is granted: true
12. Issue a short loan to a user (Unsuccessful):
 - Expected Output:
Is granted: false
13. Issue a long loan to a user (Successful):
 - Expected Output:
Is granted: true
14. Issue a long loan to a user (Unsuccessful):
 - Expected Output:
Is granted: false
15. Return a book back to the library (Successful):
 - Expected Output:
Is returned: true

16. Return a book back to the library (Unsuccessful):
- Expected output:
Is returned: false
17. Return a book by an author (Successful):
- Expected Output:
A list of books by the specified author and the No of available books
18. Return a book by an author (Unsuccessful):
- Expected Output:
A “No results found” message and the No of available books
19. Return a book by a title (Successful):
- Expected Output:
A list of books by the specified title.
20. Return a book by a title (Unsuccessful):
- Expected Output:
A “No results found” message
21. Return a book by a classification code (Successful):
- Expected Output:
A list of books by the specified classification code.
22. Return a book by a classification code (Unsuccessful):
- Expected Output:
A “No results found” message
23. Return all the books in the library catalogue (Successful):
- Expected Output:
A list of all the books in the library catalogue or a “There are no books in the list” message.
24. Return all the books in the library catalogue (Unsuccessful):
- Expected Output:
N/A
25. Return all the users in the system (Successful):
- Expected Output:
A list of all the users in the system or a “There are no users in the list message”.
26. Return all the users in the system (Unsuccessful):
- Expected Output:
N/A

27. Return all the loans (Successful):

- Expected Output:
A list of all the loans recorded in the system or a “There are no loans in the list message”.

28. Return all the loans (Unsuccessful):

- Expected Output:
N/A

23. Return all the overdue books (Successful):

- Expected Output:
A list of all the overdue books or a “There are no books overdue” message

24. Return all the overdue books (Unsuccessful):

- Expected Output:
N/A

25. Exit the application:

- Expected Output:
The application exits.